

SMITHSONIAN SCIENCE INFORMATION EXCHANGE PROJECT NUMBER (Do NOT use this space)	U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE PUBLIC HEALTH SERVICE NOTICE OF INTRAMURAL RESEARCH PROJECT	PROJECT NUMBER  Z01 HL 00003-03 LBG						
PERIOD COVERED July 1, 1975 through June 30, 1976								
TITLE OF PROJECT (80 characters or less)  Regulation of Receptor Activity								
NAMES, LABORATORY AND INSTITUTE AFFILIATIONS, AND TITLES OF PRINCIPAL INVESTIGATORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED ON THE PROJECT  <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">PI: Marshall Nirenberg</td> <td style="width: 33%;">Chief, Lab. of Biochemical Genetics</td> <td style="width: 33%;">LBG NHLI</td> </tr> <tr> <td>Hiroshi Matsuzawa</td> <td>Visiting Associate</td> <td>LBG NHLI</td> </tr> </table>			PI: Marshall Nirenberg	Chief, Lab. of Biochemical Genetics	LBG NHLI	Hiroshi Matsuzawa	Visiting Associate	LBG NHLI
PI: Marshall Nirenberg	Chief, Lab. of Biochemical Genetics	LBG NHLI						
Hiroshi Matsuzawa	Visiting Associate	LBG NHLI						
COOPERATING UNITS (if any)  None								
LAB/BRANCH Laboratory of Biochemical Genetics								
SECTION Section on Molecular Biology								
INSTITUTE AND LOCATION NHLI, NIH, Bethesda, Maryland 20014								
TOTAL MANYEARS: 1.3	PROFESSIONAL: 1	OTHER: .3						
SUMMARY OF WORK (200 words or less - underline keywords)  <p>Evidence for a new type of PGE<sub>1</sub> receptor coupled to <u>cGMP</u> accumulation was obtained. Cell lines with PGE<sub>1</sub> <u>receptors</u> coupled only to <u>cAMP</u> were found as well as cell lines with 2 species of PGE<sub>1</sub> receptors, one coupled to cAMP accumulation, the other to cGMP accumulation. The 2 species of PGE<sub>1</sub> receptors also desensitize at different rates. These results show that the coupling of PGE<sub>1</sub> to increases in cAMP and cGMP levels are clonally inherited properties which can be expressed independently.</p>								

Project Description:

Objectives: The objective is to define receptor-mediated responses of clonal cells which can be used as model systems for synapse studies.

Major Findings: Evidence for a new type of PGE<sub>1</sub> receptor coupled to cGMP accumulation was obtained. Cell lines with PGE<sub>1</sub> receptors coupled only to cAMP were found as cell lines with 2 species of PGE<sub>1</sub> receptors, one coupled to cAMP accumulation, the other to cGMP accumulation. The 2 species of PGE<sub>1</sub> receptors also desensitize at different rates. These results show that the coupling of PGE<sub>1</sub> increases in cAMP and cGMP levels are clonally inherited properties which can be expressed independently.

Publications:

1. Matsuzawa, Hiroshi and Nirenberg, Marshall: Receptor-mediated shifts in cGMP and cAMP levels in neuroblastoma cells. Proc. Natl. Acad. Sci. USA 72: 3472-3476, 1975.
2. Bachrach, Uriel: Cyclic AMP-mediated induction of ornithine decarboxylase of glioma and neuroblastoma cells. Proc. Natl. Acad. Sci. USA 72: 3087-3091, 1975.